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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

MAY 17 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

REPLY TO ATTENTION OF:

Robert C. Davis
Butzel Long
150 W. Jefferson
Detroit, Michigan 48226-4430

Re: Hi-Mill Manufacturing Co. Site
Vertical Profiling Dispute

Dear Mr. Davis:

In accordance with Paragraph XIX.B. of the Administrative Order by Consent regarding the Remedial Investigation and Feasibility Study at the Hi-Mill Manufacturing Company Site, Docket No. V-W-88-C-127 ("the Order"), the United States Environmental Protection Agency (U.S. EPA) hereby provides its written response to the formal dispute raised in your letter dated May 6, 1991 ("the letter").

The letter, which was received by my office on May 7, 1991, disputes the U.S. EPA's request for vertical sampling of proposed wells IW-6 and IW-7, and vertical sampling in the vicinity of IW-1, IW-3 and SW-18. Comments submitted for the draft work plan on March 7, 1991, and April 15, 1991, explained the rationale for this requirement. Analytical data indicated chromium levels above detection limits in the intermediate aquifer in both intermediate wells, and suggested that concentration was increasing towards the west. Further investigation is required to characterize the extent of contamination in the intermediate aquifer. U.S. EPA and the Michigan Department of Natural Resources (MDNR) requested a new well in the vicinity of IW-1 and IW-3, and vertical sampling of the entire aquifer for VOCs and metals because of the increase of chromium to the west, the elevated conductivity levels of both wells, and the depth of the screen in the wells from which samples were taken. The samples obtained were taken from wells screened at the top of the intermediate aquifer, and a potential exists for higher concentrations at depth. A concern with the possibility of contamination moving vertically from the Target Pond into the intermediate aquifer via the window in the blue clay identified in Figure 12 of Geologic Cross Section C-C' of the January, 1991 Technical Memorandum, and then moving west prompted a request for vertical sampling of the intermediate aquifer in the vicinity of SW-18. Additionally, it was noted that investigation of the

intermediate aquifer during Phase II while a drill rig was on site was more efficient than the third phase inherent in Respondent's proposal.

The letter questions several of the purposes served by the vertical sampling, namely:

1. Investigation of impacts from site operations in the intermediate aquifer;

2. Determination of appropriate screen position for Phase II wells to be installed in the intermediate aquifer;

3. Investigation of the area surrounding SW-18 to determine whether a connection exists between Target Pond and the intermediate aquifer; and

4. Efficient use of the drill rig during Phase II rather than contemplating a third phase.

The following discussion summarizes Respondent's arguments and provides U.S. EPA's response.

1. Impacts on Intermediate Aquifer

Dispute:

Respondent questions the need to define impacts from former Hi-Mill operations by attacking findings of chromium, trichloroethene (TCE) and dichloroethene (DCE) in the intermediate aquifer at the Site. Respondent argues that the chromium concentrations found in intermediate wells 1 and 3 during the Phase I investigation could have been influenced by blank contamination, and requests an abeyance of the vertical profile sampling requirement pending review of analytical results from a second round of sampling. Respondent attacks the 1988 TCE and DCE findings of the Michigan Department of Public Health (MDPH) as unvalidated and attempts to refute these findings with the results from an investigation conducted by the Respondent's former consultant, Techna Corporation (Techna), involving the sampling of 6 monitoring wells, one of which is alleged to have been screened in the intermediate aquifer. Techna concluded that based on the distance between the production wells, the low concentrations of chlorinated solvents detected in the production wells, and the lack of solvent contamination in surficial soils near the wells, the impacts detected by the MDPH were caused by localized surface spills into the groundwater via the annular spacing surrounding the wells.

Response:

Respondent is attempting to discredit the limited findings in the intermediate aquifer as a basis for avoiding further sampling of that aquifer. The qualifiers cited were not used for the chromium results in the draft RI Report. If there is a possibility of blank contamination, then we still know nothing of the water quality of the intermediate aquifer. Increased vertical sampling should address Respondents concern about the validity of the limited findings available for that aquifer.

The limited hydrological assessment relied upon by Respondent to conclude that the findings were localized, is not valid. This is due to the fact that the work was not observed by U.S. EPA or MDNR, no work plan was reviewed for acceptability, no drilling techniques or installation procedures were proposed or approved by U.S. EPA or MDNR; no development or sampling was observed by either agency; and the work was not included in the Quality Assurance Project Plan. Techna's claim that there is a lack of solvents in the surficial soils near the wells is incorrect. The Phase I soil results show that TCE was detected at concentrations of up to 57 ppm around the facility. In addition, Techna's claim that the contaminants found in the production wells was due to seepage via the annular spacing around the wells, is purely speculative with no evidence to back up the claim.

One of the stated purposes of the Order is to conduct a remedial investigation to determine fully the nature and extent of the release or threatened release of hazardous substances, pollutants or contaminants. Contaminants were detected in the few samples taken from the intermediate aquifer. More samples are needed from different locations and depths within this aquifer. The two wells where chromium was detected are screened in the uppermost portion of the intermediate aquifer. Additional samples from these wells will not reveal the full extent of vertical contamination.

2. Screen Positions for Phase II Wells

Dispute:

With regard to using vertical profiling to determine appropriate screen positions for Phase II monitoring wells, Respondent argues that this is inconsistent with unnamed policies; that U.S. EPA and MDNR approved the intermediate well construction procedure of the initial work plan, and that U.S. EPA has stated that analytical results from the field gas chromatograph (GC) will not be used in RI decisions. Respondent also asks several questions: a) Where will monitoring wells be set if no impacts are discovered in the intermediate aquifer?; b)What if the GC generates false positive results?; c) Does Respondent need to

confirm the GC results with a certified Contract Lab Procedure (CLP) analysis?; d) Are the requested metals analyses to be performed on-site also?. It is Respondent's contention that there is no data to support U.S. EPA's suspicions of potential impact to the intermediate aquifer, no guarantees of detecting contamination, and that the criteria used to approved the Phase I Work Plan has been abandoned when site conditions have not changed.

Response:

The monitoring wells installed during Phase I of the RI provided information on groundwater flow paths, geologic conditions at and around the site, and an initial indication of the presence or absence of and/or the concentration of contaminants in the groundwater. After evaluating the first round of data it is then appropriate to identify data gaps and determine what additional field investigation tasks remain necessary to complete the RI. Due to the unknown nature of contminant migration, U.S. EPA often initiates a second phase of RI work which entails a departure from the initial approach. This approach is consistent with U.S. EPA's approach to Superfund sites. Section XI.A. of the Order provides for additional work if necessary to accomplish the objectives of the RI/FS. A determination has been made based on sound technical interpretation of the data collected to date that vertical profiling in the intermediate aquifer is necessary to fully characterize the intermediate aquifer.

While field screening results might not be considered as actual analytical data for RI/FS decisions, the field screening, conductivity measurement, pH, and temperature results will be used to place the well screens in the most appropriate portion of the aquifer. Since the screen will then be placed at the intervals most likely impacted by site contamination, the analytical results from the CLP-analyzed samples from those wells will be more indicative of the actual water quality within the aquifer.

U.S. EPA responds to the questions raised as follows:

a) If GC results show no indication of organic contamination upon satisfactory completion of vertical sampling and screening of the intermediate aquifer, and if the conductivity levels do not exceed the levels at the screen intervals of nearby intermediate wells, then the installation procedures described in the Techna workplan should be followed.

b) and c) As to false positive results, the field screening on the GC and the conductivity measurements are to determine the appropriate location for screen placement. The objective of the field screening is to find the interval(s) within the aquifer with the greatest likelihood of impact by organic and/or

inorganic contaminants. The CLP analytical results from the water samples collected, after the monitoring wells have been properly installed, is the data that will be used for "RI/FS decisions."

d) With regard to metals screening, U.S. EPA and MDNR have requested that conductivity, pH and temperature measurements be used as an indication of degradation of the intermediate aquifer.

3. Connection between Target Pond and Intermediate Aquifer

Dispute:

Respondent questions the existence of a window in the confining layer which may serve as a migratory pathway to the intermediate aquifer, while admitting that the boring logs indicate that the clay layer is thinning in the east. Respondent contends that there is no indication that the clay layer is not present in the area, that contaminants associated with the site have a very limited migration route to the area, that there is no evidence from groundwater and drainage flow to suggest that groundwater impacted by the site would migrate to the area on the east side of the Target Pond, that the potion of shallow groundwater flowing east from the facility is intercepted by Target Pond and only surface water which is recharged by vertical seepage to groundwater from Target Pond would have impacted the area in proximity to well SW-18, and that given low seepage velocity of the clay layer, westerly drainage (under M-59) of Target Pond, the high volatility of the organic constituents identified at the site and the high absorption affinity of the metals at the site, it is improbable that any impact would be detected in the intermediate aquifer east of Target Pond. Respondent also contends that even if a breakthrough did occur, the location would be upgradient of the intermediate wells installed directly east of the Hi-Mill facility.

Response:

Respondent again relies upon the limited nature of the data available as a basis for avoiding further inquiry. Respondent identifies a window in Figure 12 of Geologic Cross Section C-C' of the January, 1991 Technical Memorandum. Accordingly, the possibility of a pathway for contamination into the intermediate aquifer should be investigated. Respondent does not deny the possibility of migration to the east side of Target Pond, and the admission of the possibility of water loss to vertical seepage is an admission of the possibility of contaminant loss to vertical seepage as well. As to the contention that any breakthrough that may have occurred would be intercepted by intermediate wells immediately east of the Hi-Mill Manufacturing Co. facility, the interception would only occur if the wells are properly located

and screened in the zone of contamination. This also assumes that the breakthrough that occurs is upgradient of the three intermediate wells (IW-2, IW-3, and IW-5).

4. Efficient Use of Drill Rig

Dispute:

Respondent finally disputes the purpose of efficiently utilizing the drill rig during Phase II of the investigation rather than contemplating a third phase. Respondent proposes to wait for the results from additional wells installed in the intermediate aquifer during Phase II before deciding on vertical profiling. Respondent notes that vertical profiling is expensive, and quotes a $25,000 figure.

Response:

One of the purposes served by the vertical profiling is to establish appropriate screen locations for the wells installed in Phase II. If such wells are not properly screened, the true nature and extent of the contamination in the intermediate aquifer may evade us. As indicated earlier, U.S. EPA disagrees with Respondent's statement that the first round of sampling gave no indication of impact on the intermediate aquifer. U.S. EPA agrees that a decision on whether a third phase is required is premature; but questions the objectives of another round of sampling with current screen locations. Please note that U.S. EPA feels that drastically lower cost estimates for the vertical profile are abundant and would like detailed cost figures if Respondent feels cost is an issue.

U.S. EPA reserves the right to supplement this response. Please phone me at (312) 886-6630 to arrange a meeting to negotiate this dispute in accordance with Paragraph XIX.B. of the Order.

Sincerely yours,

Maria Gonzalez
Assistant Regional Counsel

cc: Hi-Mill Manufacturing Company
Dr. James Harless
Kevin K. Wolka, P.E., Ph.D.
Debbie Larson
Murat Akywrek

bcc: Karla Johnson
Susan Louisnathan
Rodger Field